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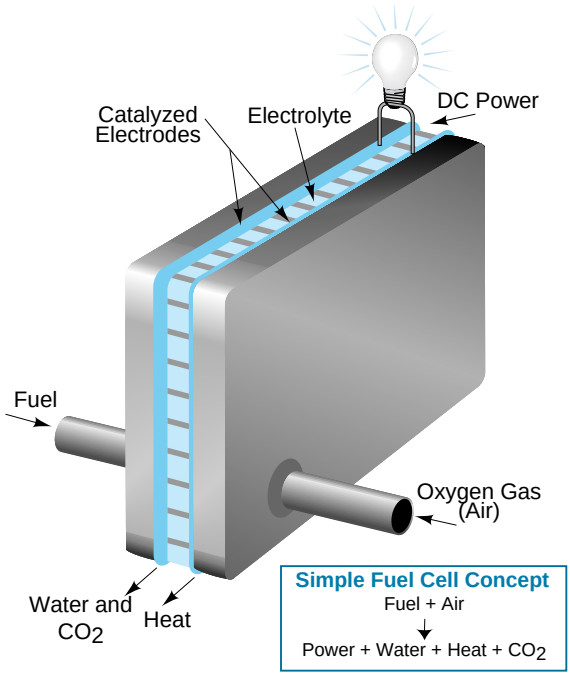
# Fuel cells—out of the lab

**by Peggy Plate**

As Thomas Wolfe once said, "you can't go home again." The utility industry has changed, continues to change, and it will never ever be the same. I am referring to neither FERC Orders No. 888 and 889, nor state and national restructuring efforts.

With or without deregulation, technology is changing the energy services industry and many of our utility customers are entering markets never dreamed of 10 years ago. For example, today utilities sell cable television, Internet access, computer training, mail services, security systems, power quality equipment, water distillers, building monitoring services and the list continues to grow.




Many public utilities and electric cooperative energy resources include green power (solar, wind, small hydro, geothermal and biomass) fuel cells, microturbine power at customer sites, biomass generation at the local landfill and market-driven load management.

Utilities and energy services companies across the nation are not just competing with each other for customers—they are competing with equipment suppliers! Let's look at just one of these distributed resources—hydrogen, a plentiful nonpolluting generation source. The technology that was once way out into the future is truly around the corner today.

Hydrogen generation technologies are leaving the laboratory and will soon be entering the commercial market. Huge investments are being made in hydrogen technology, and, specifically, fuel cells.

Not only is hydrogen cleaner, it fits very well as a transitional fuel. Hydrogen can be generated by fossil fuels such as natural gas, propane and gasoline, and renewables such as methane, solar, wind and water. As the technology advances, we can wean ourselves away from nonrenewable resources.

Commercializing this one technology can change lives. Lawnmowers will emit a trickle of water—not nasty fumes. Laptops will have a methane fuel cell—not a battery. Cars will manufacture hydrogen right onboard for a fuel cell engine, and it will also serve as a peaking plant for your home.

As you can see, most fuel cell applications are on the customer side of the meter. And that new "utility" customer expects options, is comfortable with "new ideas," values high reliability, and wants control and independence, as well as a cleaner resource choice. These new customers will want to choose how they power their commercial building or irrigation systems, how they operate their refrigerator, power their car and heat their homes.

The First National Bank of Omaha uses a fuel cell system to power its computer system. The bank needed a higher level of reliability than the utility could offer. Today Omaha Public Power District the bank's electric utility, will be testing a 200-kW fuel cell at its own facility. The plant will give OPPD workers the opportunity to learn about operating and maintaining fuel cells, a technology that is growing in use around the country.

Look at this past summer: increasing natural gas shortages and rising prices; wildly fluctuating electricity prices and growing loads; the scramble to build new natural gas power plants; erratic weather patterns possibly related to a shift in the climate; and the California "experiment" in retail competition. The stage continues to be set for new technologies to move into the marketplace. We have the opportunity to reduce dependence on foreign oil; not be held captive to natural gas price volatility; and dampen the effects of erratic pricing of fossil based electric generation.

Alan Richardson, APPA executive director, noted, "Distributed generation provides plenty of opportunities for public power. Local reliability and customer-service responsiveness are becoming more and more our competitive advantage in this crazy world of private utility consolidation, absentee ownership and distant service offices. Those already involved in these areas have taken a hard look at the future and are on the right path. Those that have not should do so."

**(Note: Plate is an energy services specialist at RM.)**